

Wildlife Populations: White-tailed Deer

Background

New Jersey's white-tailed deer (*Odocoileus virginianus*) herd is a major component of the landscape throughout all but the most urbanized areas of the state. "White-tailed" refers to the white underside of the tail, which is held conspicuously erect like a flag when the animal is alarmed or running. The adult white-tailed deer has a bright, reddish-brown summer coat and a duller, grayish-brown winter coat. White fur is located in a band behind the nose, in circles around the eyes, inside the ears, over the chin and throat, on the upper insides of the legs and beneath the tail. The young, called fawns, have reddish coats with white spots.¹ Deer affect our forests, farms, gardens, back yards and roadways. In the early 1900s, there was only a handful of deer in the state, but the population rebounded during the 20th century.

Deer are photographed, watched and hunted by many New Jersey residents and visitors. Deer hunters spend more than 100 million dollars each year, which benefits a wide variety of New Jersey businesses.

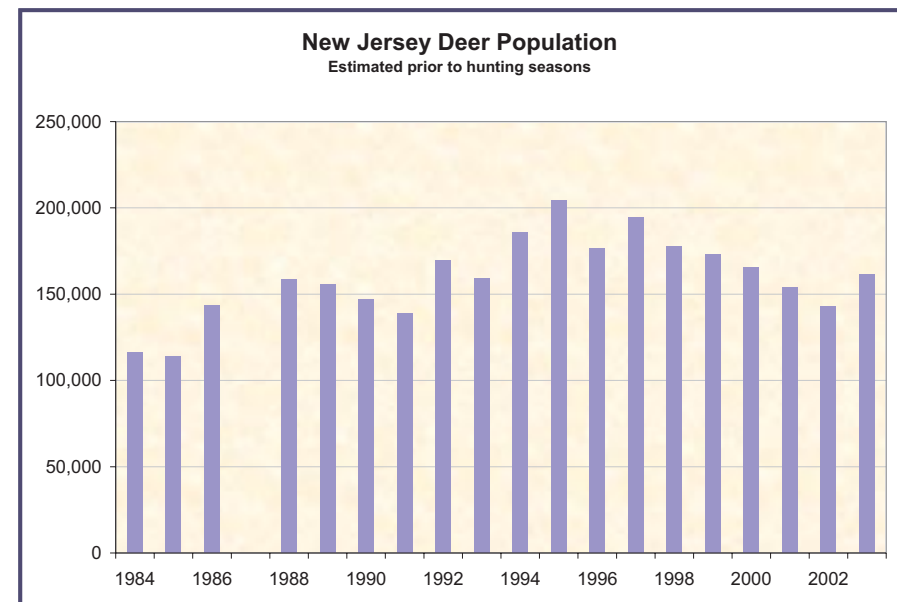
Deer also have negative impacts on humans, including car collisions, depredation of agricultural and ornamental plantings, and the potential for harboring diseases that are transmissible to man or domestic animals. Deer are selective browsers, and, over time, herds can eat some plants out of existence and reduce the populations of other plants. Because tree seedlings are especially vulnerable to hungry deer, the future species composition of forests can be determined by deer browsing. While trees eventually grow out of a deer's reach, many other plants never do. Because deer browsing can significantly change habitat composition, it also exerts a strong influence on other animal populations.

The size of the deer herd is managed through controlled sport hunting. The goal is to maintain deer populations at a density tolerable to New Jersey residents, and to maximize the recreational and economic benefits derived from this renewable natural resource.

Deer are managed in New Jersey according to deer management zones, or areas with similar land-use, ecological and deer-herd characteristics. The zone boundaries include highways, rivers and other easily identifiable landmarks.

Trend

The figure "New Jersey Deer Population" below shows the deer population estimates for 1984-2003.² Changes in hunting regulations over the years introduce variability into the population estimates since the basic data is derived from hunter-harvested deer, which are affected by the changing regulations. In addition, estimates for populations in non-hunting areas are not available, and this lack of information makes the population estimates conservative.³



Outlook and Implications

Managing deer numbers through annual adjustments to the deer-hunting seasons is relatively effective in areas with good hunter access. However, factors such as development patterns, establishment of parks where hunting is prohibited, regulations that severely restrict or preclude hunting and landowner decisions not to allow hunting have resulted in excessive deer populations in some areas.

Deer may be a “keystone species,” affecting the ecosystem at many levels. Studies in Pennsylvania involving enclosed areas have revealed a loss in animal and plant diversity as deer populations exceeded 10 per square mile. The depletion increased in a nearly linear fashion as deer density increased.⁴ Based on this study, in a situation where maximum biodiversity is the goal, a population above 10 per square mile would be undesirable. In New Jersey, deer management programs have typically used 20 per square mile as a goal in community-based deer management plans, reflecting a balance of citizen interests and strict ecological arguments.⁵ However, the appropriate deer density to maximize biological density in New Jersey’s varied habitats has not been determined. An ongoing study by DEP biologists seeks to determine the effect of varying deer densities on vegetation in New Jersey’s diverse forest types.

More Information

www.nj.gov/dep/fgw/deer.htm
www.nhptv.org/natureworks/whitetaileddeer.htm
www.dnr.state.wi.us/org/caer/ce/eeek/critter/mammal/fawn.htm
<http://pa.audubon.org/Deerfactsheetrev1.htm>

References

Much of the information in this report was provided by the NJDEP Division of Fish and Wildlife Web site at www.nj.gov/dep/fgw/deer.htm

¹ www.desertusa.com/mag99/june/papr/wtdeer.html, 12/28/04.

² Data not available for 1987.

³ Joseph Penkala, NJDEP Division of Fish and Wildlife, Bureau of Wildlife Management, personal communication.

⁴ Katz, Larry, 2004, Rutgers University, personal communication.

⁵ Katz, Larry, 2004, Rutgers University, personal communication